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EXAMINER

PAYNE, SHARON E

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,275

Applicant(s)

BELLONI ET AL.

Examiner

Sharon E. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 70 is/are allowed.
- 6) ☒ Claim(s) 41-48, 50, 51, 53-58, 61-65, 67-69 and 71-78 is/are rejected.
- 7) ☒ Claim(s) 49, 52, 59, 60 and 66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 43 is objected to because of the following informality: the word "total" should be "totally" in line 43.
2. Claim 46 is objected to because of the following informality: the word "surface" should be "face" in line 4.
3. Claim 62 is objected to because of the following informality: the phrase "the first-mentioned element component" should be "the light permeable element" in line 2.
4. Claim 78 is objected to because of the following informality: the word "form" should be "from" in line 11. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 41-45, 47-48, 50-51, 54-58, 61-62, 67-69, 71-78 are rejected under 35 U.S.C. 102(b) as being anticipated by Swift et al. (U.S. Patent 5,207,504).

Regarding claim 41, Swift et al. discloses a system of light units (column 1, lines 40-45), each having one of a plurality of predetermined light emission properties for illuminating a space (column 2, line 65, to column 3, line 2), each light unit comprising a support structure (Fig. 1 at top and Figs. 6A-6C), at least one hollow light guide with a cavity (Fig. 1, top), at least one lamp for directing light into the cavity (reference number 36), optical components carried by the support structure (column 6, lines 59-65, and

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column 7, lines 58-65), the components having light directing properties for influencing the beam path of the light output from the lamp (column 7, lines 58-65), at least one of the optical components being a light permeable component having a medium with a first index of refraction (reference number 78) and having a boundary surface with a medium of a second index of refraction different from the first (air, Fig. 8), the light permeable component being part of a light output device and the boundary surface being provided with a light-refractive structure for deflecting light in at least one plane directed perpendicular to a light exit face (Fig. 8) so that the light intensity distribution curve of the light emerging at the light exit face is influenced in this plane (column 8, line 65, to column 9, line 2), at least one of the optical components of each light unit being a plurality of cap reflectors having optical properties differing from the others (Figs. 5A-5C), the element being carried by the support structure (Figs. 1 and 3) whereby the one or more optical components carried by the support structure determine the one of a plurality of predetermined light emission properties of the light units (column 6, lines 40-55).

Concerning claim 42, Swift et al. discloses the support structure of each light unit of the system having the same dimension for receiving the element (column 5, line 65, to column 6, line 25).

Regarding claim 43, Swift et al. discloses the element as a totally reflective cap reflector so that the light unit can be changed to a direct lighting unit (column 6, lines 63-65).

Concerning claim 44, Swift et al. discloses the selected element as a cap reflector having reflecting properties that affect the light emission properties of the light unit (column 6, lines 59-68).

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Regarding claim 45, Swift et al. discloses the light permeable component comprising one or more plate elements (reference number 78) having light refractive structures that affect the light emission properties of the light unit (column 8, line 65, to column 9, line 2).

Concerning claim 47, Swift et al. discloses the support structure including a light permeable plate (reference number 79) and the plate elements rest on the light permeable plate (Fig. 8).

Regarding claim 48, Swift et al. discloses the plate element being held onto the light permeable plate by at least one frame element (Fig. 8).

Concerning claim 50, Swift et al. discloses the support structure of a group of light units of the system having the same dimension and the light emission properties are different according to the optical properties of at least one of the optical components being mounted on the support structure (column 6, lines 20-30, and column 6, lines 40-55, and column 3, lines 45-60).

Regarding claim 51, Swift et al. discloses the selected element is an input reflector having reflect properties and dimensions that affect the light emission properties of the unit (column 3, lines 45-60).

Concerning claim 54, Swift et al. discloses a group of units wherein the light output face by which light is coupled out from the hollow light guide is different for at least two different light units of the group (column 3, lines 60-65), the light permeable component is a plate element (reference number 78) and the support structure of each of the light units of the group has the same dimensions for receiving the plate element (column 6, lines 20-25).

Regarding claim 55, Swift et al. discloses the light units being lighting units for illuminating an indoor space (column 1, line 54, to column 2, line 20).

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Concerning claim 56, Swift et al. discloses a system of light units, each having one of a plurality of predetermined light emission properties for illuminating an indoor space (column 6, lines 15-55), each light unit comprising a support structure (column 6, lines 20-30) having a light permeable plate (Figs. 4, 6A-6C, 7-8), at least one hollow light guide with a cavity (Fig. 8, center portion), at least one lamp for directing light into the cavity (reference number 62), one or more optical components carried by the light permeable plate (Fig. 8), the optical components having light directing properties for influencing the beam path of the light output from the lamp (column 8, line 65, to column 9, line 2), at least one of the optical components being a light permeable element having a medium with a first index of refraction (reference number 78) and having a boundary surface with a medium of a second index of refraction (air through the aperture of lens 79, Fig. 8) the light permeable element being received on the light permeable plate of a light output device of the unit (Fig. 8), and the boundary surface being provided with a light refractive structure for deflecting light in at least one plane directed perpendicular to a light exit face of the output device so that the light intensity distribution curve of the light emerging at the light exit face is influenced in this plane (column 8, line 65, to column 9, line 2), and a cap reflector (Figs. 5A-5C) mounted on the structure to reflect light in the light guide through the light permeable element (Fig. 8), at least one of the components being an element that is dimensioned so that it can be used in any one of the light units of the system (column 2 in line 65 to column 3 in line 2, column 3 in lines 60-65 and column 6 in lines 20-30 and lines 40-55).

Concerning claim 57, Swift et al. discloses a totally reflective cap reflector so that the light unit can be changed to a direct lighting unit (column 6, lines 60-65).

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Regarding claim 58, Swift et al. discloses the light permeable element (reference number 78) as a plate element (Fig. 8) which is secured to the light permeable plate of the support structure (reference number 79, Fig. 8).

Concerning claim 61, Swift et al. discloses the light unit including a light permeable plate (reference number 79) and the at least one optical component is a plate element (reference number 78) held onto the light permeable plate by at least one frame element (Fig. 8).

Regarding claim 62, Swift et al. discloses the first-mentioned element can be replaced by a second element of the same dimensions and different properties so that by replacing the first element with the second element (Figs. 6A-6C, and column 7 in lines 7-42). (The apertures and the sides of the apertures are light permeable elements carried by the light permeable plate.)

Concerning claim 67, Swift et al. discloses a plurality of light units (column 6, lines 17-25) each having a light guide forming a cavity (Fig. 1, second apparatus from the top, portion defined by the reflector), a lamp for directing light into the cavity (reference number 36), and plural optical components (reference numbers 78 and 79) located outside the cavity or at the periphery thereof (Fig. 8), each of the plural optical components (Figs. 5A-5C and reference number 78) having different light directing properties for influencing the beam path of a portion of the light directed into the cavity (column 8, line 61, to column 9, line 2), wherein the optical components are interchangeable among each unit (Figs. 5A-5C, column 8 in line 61 to column 9 in line 2), said units each having one of a plurality of predetermined light emission properties for illuminating a space (column 6, lines 17-30).

Regarding claim 68, Swift et al. discloses a plurality of light units having light emission properties for illumination of a space (column 6, lines 17-30), each unit having

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a light guide forming a cavity (Fig. 1, second apparatus from the top, portion defined by the reflector), a lamp (reference number 36) for directing light into the cavity (Fig. 8), and plural optical components exteriorly of the cavity or at the periphery thereof (Fig. 8) each having different light directing properties for influencing the beam path of a portion of the light directed into the cavity (Figs. 5A-5C and column 8 in line 65 to column 9 in line 2), a method of changing the light emission properties of a selected one of the plurality of units by interchanging optical components having different light directing properties (column 6, lines 55-68, and column 8 in line 61 to column 9 in line 2).

Concerning claim 69, Swift et al. discloses a support structure (reference number 48), a light guide forming a cavity (Fig. 8, portion defined by the reflector), a carrier plate (reference number 79) carried by the support structure (Fig. 8) and defining a generally smooth light emitting surface of the cavity (Fig. 8) through which light is output having one of a plurality of predetermined light emission properties for illuminating a space (column 6, lines 40-55) and an optical component (reference number 78) carried by the carrier plate (Fig. 8), the optical component having a light refractive structure and being formed by one or more light permeable elements (column 8, line 65, to column 9, line 2, and Fig. 8).

Regarding claims 71 and 73, Swift et al. discloses the portion of light influenced by the plural optical components that has not previously passed through one of the plural optical components having light transmitting properties (column 3, lines 52-59).

Concerning claim 72, Swift et al. discloses a plurality of units each having one of a plurality of predetermined light emission properties for illuminating a space (column 6, lines 21-30 and lines 40-55), each unit having a light guide forming a cavity (Fig. 8, portion defined by the reflector), a lamp for directing light into the cavity (reference number 36), and plural optical components located outside the cavity (the reflector and

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reference number 78, Fig. 8), each of the plural optical components having different light directing properties for influencing the beam path of a portion of the light directed into the cavity that has not previously passed through one of the plural optical components having light transmitting properties (column 6, lines 55-68, and column 8, line 65, to column 9, line 2, Fig. 8), wherein the optical components are interchangeable among each unit (column 3, lines 60-65).

Regarding claim 74, Swift et al. discloses a plurality of light units (column 7, line 65, to column 8, line 1), each having a light guide forming a cavity (Fig. 8, portion defined by the reflector), a lamp for directing light into the cavity (reference number 36), and plural optical components having different light directing properties for influencing the beam path of a portion of the light directed into the cavity that has not previously passed through one of the plural optical components having light transmitting properties (column 3, line 45-60), a method of changing the light emission properties of a selected one of the plurality of units by interchanging optical components having different light directing properties (column 6, lines 40-55).

Concerning claim 75, Swift et al. discloses the cap reflector being an element that is dimensioned so that it can be used in any one of the light units of the system (column 7, lines 50-65).

Regarding claim 76, Swift et al. discloses a support structure (reference number 48), a light guide forming a cavity (Fig. 8, portion defined by the reflector), a lamp for directing light into the cavity (reference number 36) and at least one optical component (reference number 78) carried by the support structure for influencing the light emission properties of the unit for illuminating the space (Fig. 8), the at least one optical component being selected from a plurality of cap reflectors, each adapted to be carried by the support structure and each having optical properties differing from the others,

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whereby the light emission properties are determined by the one or more of said optical components carried by the support structure (Figs. 5A-5C, column 6, lines 55-65).

Concerning claim 77, Swift et al. discloses a plurality of support structures (column 5, line 65, to column 6, line 30), a plurality of lamps (reference number 36, Fig. 1), a plurality of optical components, each of the optical components being adapted to be carried by any one of the plurality of support structures (Figs. 5A-5C, column 6, lines 15-65), each of the plurality of space lighting units within the system comprising one of the plurality of support structures (Fig. 2, top of figure) , one or more of the plurality of optical components being carried by the support structure for such unit for influencing the light emission properties of such unit (Fig. 8), the at least one optical component being selected from a plurality of cap reflectors each adapted to be carried by any one of the plurality of support structures (Figs. 5A-5C) and each having optical properties differing from the others (Figs. 5A-5C), one or more of the plurality of lamps for directing light into a cavity of a light guide formed in such unit (reference number 36), the light emission properties of each of the plurality of units being selectively determined by the optical components carried by the support structure of the unit (column 6, lines 40-65).

Regarding claim 78, Swift et al. discloses a plurality of space lighting units (column 5, line 64, to column 6, line 40) each having predetermined light emission properties selected from among a plurality of light emission properties (column 6, lines 40-55), each of the space lighting units comprising a support structure (column 6, lines 20-25), a light guide forming a cavity (Fig. 1, 2nd apparatus from the top), a lamp for directing light into the cavity (reference number 36) and one or more optical components carried by the support structure for determining the light emission properties of the unit (Fig. 8), the one or more optical components being selected from a plurality of cap reflectors, each adapted to be carried by any one of the plurality of support structures

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(Figs. 5A-5C) and each having optical properties differing from the others (Figs. 5A-5C), a method of selectively determining the light emission properties of each of the plurality of units by the selection of the optical components to be carried by the support structure for such unit (column 6, lines 40-65).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 63-65 are rejected under 35 U.S.C. 102(e) as being anticipated by Zou et al. (U.S. Patent 6,185,357).

Regarding claim 63, Zou et al. discloses a support structure (Fig. 1a), at least one hollow light guide with a cavity (Fig. 1a, inside the box), at least one lamp for directing light into the cavity (reference number 20), optical components having light directing properties for influencing the beam path of the light output from the lamp (reference numbers 70 and 80), at least one of the optical components being a light permeable component having a medium with a first index of refraction (reference number 70) and having a boundary surface with a medium of a second index of refraction, which is different from the first (Fig. 1a, air hitting top of light permeable component, reference number 70), the light permeable component being part of a light output device of the unit (Fig. 1a) and the boundary surface being provided with a light

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refractive structure for deflecting light in at least one plane directed perpendicular to a light exit face of the output device so that the light intensity distribution curve of the light emerging at the light exit face is influenced in this plane (Fig. 1a, reference number 70, all refractors do this), the light permeable component being a prefabricated light permeable component with predetermined dimensions (Fig. 1a), the method comprising the steps of providing the prefabricated light permeable component (reference number 70), providing the light permeable carrier plate having a generally smooth surface (reference number 80) arranging at least one pre-fabricated light permeable component on the carrier plate in a predetermined area of the carrier plate (Fig. 1a) and fastening the pre-fabricated light permeable component (reference number 70) and the carrier plate (reference number 80) so that the limit the cavity of the hollow light guide (Fig. 1a) wherein the carrier plate forms the outermost element of the light output device through which the light is output for illuminating a space (Fig. 1a, bottom).

Concerning claim 64, Zou et al. the step of arranging positioning the pre-fabricated light permeable component (reference number 70) on the carrier plate (reference number 80), the space adjacent the pre-fabricated light permeable component remains uncovered by the component (Fig. 1a, portions on either side of the light permeable component, reference number 70), said uncovered region having an area smaller than the area of the carrier plate covered by the component (Fig. 1a, bottom).

Regarding claim 65, Zou et al. discloses the step of fastening which includes positioning a frame element on the carrier plate in the uncovered region (Fig. 1a, column 5, lines 18-21).

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Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 46 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift et al. in view of Zou et al.

Regarding claim 46, Swift et al. does not specifically disclose a refractive structure of the plate element that essentially prevents a light emission above a limited angle relative to the perpendicular vis a vis light exit face in at least one plane perpendicular to the light exit surface so that the shielding of light emerging at the light exit face is produced in this plane.

Zou et al. discloses a plate element having a refractive structure that essentially prevents a light emission above a limited angle relative to the perpendicular vis a vis the light exit face in at least one plane perpendicular to the light exit surface (face) so that

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the shielding of light emerging at the light exit face is produced in this plane (column 6, lines 1-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the refractive structure of Zou et al. in the apparatus of Swift et al. to reuse light and have a uniform light distribution produced. See column 6, lines 20-25, of Zou et al.

Concerning claim 53, Swift et al. does not disclose a stack of light permeable components creating a shielding effect at least in two directions perpendicular to each other.

Zou et al. discloses two light permeable components with the light refractive structure (reference numbers 70 and 80), the two light permeable components being arranged in a stack (Fig. 1a) to create a shielding effect at least in two directions perpendicular to each other (Figs. 4b and 4c, column 10 in lines 10-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Zou et al. in the apparatus of Swift et al. to concentrate light to a desired area, making better use of electrical and light energy. See column 2, lines 25-35, of Zou et al.

Allowable Subject Matter

12. Claim 70 is allowed.

13. Claims 49, 52, 59, 60 and 66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to disclose a lighting system with the following features:

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1) a system wherein one of the input reflectors completely reflects light into the hollow light guide and another input reflector directs part of the light to bypass the hollow light guide to provide indirect lighting as recited in claim 52;

2) at least two light permeable elements, the two light permeable elements being plate elements with the light refractive structure, the two plate elements being arranged in a stack *on the light permeable plate* to create a shielding effect in two directions perpendicular to each other as recited in claim 60;

3) the step of positioning at least two pre-fabricated light permeable components on the carrier plate with an uncovered region therebetween and positioning a spacer element in the uncovered region as recited in claim 66; and

4) an optical component carried by the carrier plate formed by two or more light permeable elements positioned side-by-side, adjacent light permeable elements being separated by a spacer element as recited in claim 70.

Regarding claims 49 and 59, Swift et al. discloses the elements of claims 47 and 56 for the reasons discussed above, and Koike et al. (U.S. Patent 5,982,540) discloses the spacer, but no motivation exists to combine the references.

Response to Arguments

15. Applicant's arguments with respect to claims 41-78 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sep



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